

COMMONWEALTH OF PENNSYLVANIA
Department of Environmental Protection
Southwest Regional Office

TO AQ Case File TVOP-04-00013

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Re Review of Title V Operating Permit Renewal Application
Jewel Acquisition, LLC.
Midland, Beaver County

APS 589069 AUTH 640316 PF 244000

Background

Jewel Acquisition, LLC. operates a steel mill located in the borough of Midland, Beaver County. The facility is a non-integrated specialty steel mill. Overall operations include electric arc melting, continuous casting, cold rolling, annealing, and finishing. In addition, there are various space heaters and fuel storage tanks. Products made include stainless steel slabs, and strip. The Midland Melt Shop primarily produces slabs to service the needs of the facility. Slabs are sent off-site to other, contracted hot rolling mills to be rolled into "hot bands". The coils are then returned to the Midland or Louisville, OH facilities for finishing to customer specifications.

The initial Title V Operating Permit (TVOP) was issued on November 30, 2001 with an expiration date of December 31, 2006. A renewal Title V Operating Permit Application was received on July 5, 2006 and deemed complete. Company updated the renewal TV application on October 10, 2011.

Since the issuance of the initial TVOP, PA-04-0013A was issued on March 22, 2002 to authorize the construction of a new Steckel Mill and related/ supporting equipment and for the modification of the Melt Shop. PA-04-0013B was issued on January 13, 2003 to authorize the installation of boiler#2 to provide process heat for the Direct Roll Anneal

and Pickle (DRAP) Line, and new H₂SO₄ and HF-HNO₃ pre-pickling tanks.

On April 21, 2006, Jewel notified DEP that were removing the existing low NO_x burners (rated at 24 mmbtu/hr) in the existing DRAP boiler and replacing them with new low NO_x burners. The made this change using the deminimis provisions of PA Code Title 25 Section 127.449.

On September 30, 2003, Jewel shut down the No. 9 Line. On September 10, 2004, Jewel applied for Emission Reduction Credits (ERCs) of 115.4 tons NO_x and 0.5 tons VOCs. On November 3, 2006, Jewel shut down the Zurn Boiler. On October 18, 2007, Jewel applied for ERCs of 7.4 tons NO_x and 0.4 tons VOCs. Review of these ERC applications has been conducted by another engineer.

A source may be inactive (not in operation) in a facility provided that the company submits a Maintenance Plan for the source within 1 year of deactivation. Process throughputs and emissions from the source should be reported to PA DEP as part of the annual AIMS emissions report. The source may be reactivated within 5 years in accordance with 25 PA Code §§127.11a (a) and 127.215 (a), and within 10 years in accordance with 25 PA Code §127.11a (b). Following Emission Units have been temporarily Deactivated and currently under Maintenance Plan:

136 Conditioning building torch cutters (Discontinued Operation on 10/06/07 and Maintenance Plan submitted on 9/18/08)

137 Conditioning building slab grinders (Discontinued Operation on 10/06/07 and Maintenance Plan submitted on 9/18/08)

151 Z-mill No. 2 (Discontinued Operation on 11/05/06 and Maintenance Plan submitted on 10/29/07)

The provisions of reactivation requirements can be found under 25 Pa Code § 127.11a. The provisions of 25 Pa Code §127.215 have been included in this permit to address any difference between the regulatory requirements. However, the facility remains active and has not been out of operation or production for one year or more.

The Department has received Reactivation Plan and Notification for source #137 "Conditioning building slab grinders" on June 15, 2012. Company anticipates resuming operations of the slab grinders during the third or fourth quarter of 2012.

Emissions and Control Equipment

The Melt Shop includes two Electric Arc Furnaces (EAFs), the Argon-Oxygen-Decarburization (AOD) vessels, numerous Ladle and Tundish preheaters, the Ladle Trim Station (LTS), the Continuous Slab Caster, Caster Cutting Torch as well as the EAF baghouse and assorted Melt Shop ventilation equipment. The particulate matter allowed by 40 CFR 60 Subpart AA, NSPS for EAFs limitation of 0.0052 gr/DSCF calculates to be 150 tons/yr. NO_x and VOC emissions limits from this operation were respectively 1270 tons and 92 tons in any consecutive 12 month period per RACT OP 04-000-013.

However, stricter emission limits were established through PA-04-00013A and PA-04-00013B. Compliance with the emission limits will be verified through stack testing, periodic monitoring and fuel specifications and usage.

The DRAP Line at this facility was constructed in the mid 1990's under Plan Approval 04-307-094A. The DRAP Line processes 200-series, 300-series and 400-series stainless steels. The existing processing steps (in order of processing) are the Coil Feed Station, Entry Welder, Shotblaster, Cold Rolling, Annealing, Pickling, Tempering and Recoiling. DRAP Boiler #1, rated at 29.28 mmbtu/hr equipped with Low NO_x Burners was installed in 1999 to provide process steam for the DRAP line. Since the construction of the DRAP line and after numerous investigations into product quality issues, company determined that additional pickling and process heat were required. The upgrades were the addition of a second boiler to provide process heat for the DRAP Line, and the installation of new H₂SO₄ and HF-HNO₃ pre-pickling tanks.

Plan Approval PA-04-00013B was issued on January 13, 2003 to add two additional pickling tanks. These tanks were installed downstream of the Shot Blaster and upstream of the Cold Reduction Mills and referred to as the Pre-Pickling section. Not all metals processed in the DRAP Line are pre-pickled. Pre-pickling is used for no more than 3000 hours per year. When pre-pickling is not required metal will continue to pass through the tanks, but the steel is suspended in the pickle baths (tanks to either be filled with clean water or steel to be kept wet with clean water sprays). Pre-Pickling consists of two tanks. The first (source 203) contains an aqueous solution of sulfuric acid; the second (source 204) consists of an aqueous solution of mixed nitric and hydrofluoric acids. Wet scrubbers are used to control acid mists and particulate matter from the tanks, and hydrogen peroxide injection for control of NO_x from the HNO₃ tank. It had been determined that the operation of these two new tanks required an additional 34,500 lbs. of steam per hour. A 33.5 mmBtu/hr natural gas fired boiler (source 210) equipped with Ultra Low NO_x Burners was installed to provide the needed steam. Emission increase due to the upgrades of the DRAP line are 15.77 TPY of CO, 21.25 TPY of NO_x, 0.12 TPY of SO₂, 1.03 TPY of VOC and 1.48 TPY of PM₁₀.

The Facility-wide PTE (tpy) is summarized as follows:

PM/PM10	SO ₂	CO	NO _x	VOC
115.7	652.3	999.0	1,360.0	123.6

Various fuel tanks are at the site. They are small in size and exempted from the requirements of Title 25 pa. Code Ch. 129.27 and 40 CFR 60.110 Subpart K.

Regulatory Analysis

All of the conditions derived from Title 25 of the Pennsylvania Code in the original Title V permit have been included in this renewal. The facility went through NSR and PSD review requirements through Plan Approval PA-04-00013A in 2002 and PA-04-00013B in 2003.

Plan Approval PA-04-00013A was for the construction of a new Steckel Mill and related/ supporting equipment and for the modification of the Melt Shop. Company did not construct the Steckel Mill at this facility. The steel melting capacity at the Melt Shop was increased from 600, 000 TPY to 720,000 TPY and Emission Reduction Credits were purchased to compensate the emission increase due to increase in production.

The Electric Arc Furnaces (EAFs) are subject to requirements of 40 CFR 60 Subpart AA, the NSPS for Steel Plants as they were constructed after the earlier effective date of October 21, 1974 but prior to August 17, 1983.

The applicability of 40 CFR 63, Subpart YYYYYY – NESHAP for Area Sources: Electric Arc Furnace Steelmaking Facilities has been evaluated. The Midland facility is an area source of HAP emissions that operates an Electric Arc Furnace, therefore Subpart YYYYYY applies.

Existing facilities were required to comply by June 30, 2008. 40 CFR 63.10685 requires Jewel to implement a scrap management program. 40 CFR 63.10686 requires Jewel to meet a particulate emission rate of 0.0052 grains/DSCF (same as 40 CFR 60 Subpart AA) and 6% opacity, which is a testing requirement. 40 CFR 63.10686(d) allows stack testing conducted for within 5 years prior to June 30, 2008 to be substituted for new testing. 40 CFR 63.10690 specifies items that must be included in the notification of compliance status.

The DRAP line boilers are defined as a steam generating units and are therefore subject to the requirements of 40 CFR 60, Subpart Dc. All the requirements have been incorporated from the initial TV Operating Permit and from Plan Approvals PA-04-00013A & PA-04-00013B to this TV Renewal Operating Permit.

The Compliance Assurance Monitoring (CAM) provisions of 40 CFR 64 applies when all of the following are true:

1. The source is located at a Title V facility,
2. The source is subject to an emission standard,
3. The source uses a control device to achieve compliance with the emission standard, and
4. Emissions from the source, without the control device, exceed major source thresholds.

Jewel has identified the following sources and associated control devices to be subject to CAM:

Source ID 106 Melt Shop
Source ID 202 DRAP Shot blast
Source ID 205 DRAP Cold Reduction Mill
Source ID 208 DRAP Pickle Tank #2 and #3

Jewel has proposed the use of existing testing, monitoring and recordkeeping requirements as CAM. Appropriate conditions have been added to the TVOP.

Additional conditions included in this TVOP are from Title 25 of the PA Code as well as appropriate testing, emission reduction, work practice standards, monitoring, recordkeeping and reporting requirements.

Conclusions and Recommendations:

Jewel Acquisition has met the regulatory requirements associated with this application submittal. The attached permit reflects the applicable regulatory requirements associated with this facility. I recommend that the proposed Title V Renewal Operating Permit be issued for this site.